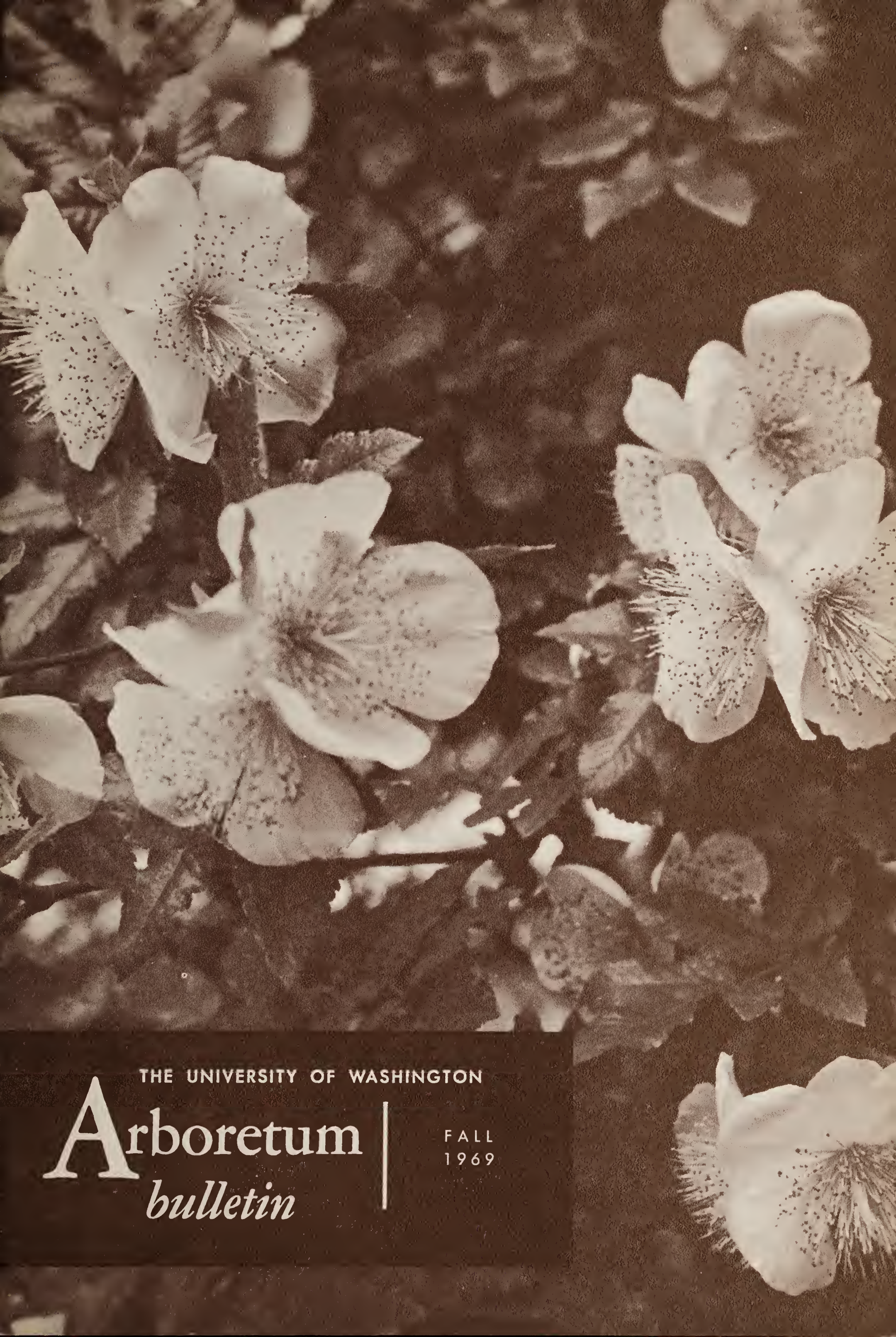

THE UNIVERSITY OF WASHINGTON

# Arboretum *bulletin*

FALL
1969

# ARBORETUM FOUNDATION

## Financial Statement

### May 1, 1968 — April 30, 1969

| | |
|---|---|
| FUNDS ON HAND May 1, 1968 | $165,963.75 |
| Receipts: | |
| Dues | 20,340.00 |
| Donations | 18,273.74 |
| Unit Council— | |
| Plant Sales | 10,512.23 |
| Other | 510.30 |
| Interest | 7,191.35 |
| Net Income from Investment Trust | 743.51 |
| Advertising and Miscellaneous | 782.47 |
| | $58,353.60 |
| Disbursements: | |
| Salaries and Christmas Bonus | 12,236.44 |
| Payroll Taxes | 529.32 |
| Membership Expense | 2,773.28 |
| Bulletin Publication | 4,657.42 |
| Publicity and Educational Program | 788.85 |
| Telephone | 297.71 |
| Professional Services | 200.00 |
| Other Operating Expenses | 317.37 |
| Unit Council Expenses— | |
| Plant Sales Costs and Expenses | 5,856.17 |
| Utilities, Supplies and Postage | 1,090.66 |
| Miscellaneous | 204.56 |
| Donations to University of Washington Arboretum, Including $2,000.00 by Unit Council | 3,792.75 |
| Purchase of Investment Securities | 794.04 |
| Refund of Donations Received in Prior Years from Seattle Rhododendron Society | 10,133.58 |
| | $43,672.15 |

### SUMMARY

| | |
|---|---|
| FUNDS ON HAND May 1, 1968 | $165,963.75 |
| TOTAL RECEIPTS | 58,353.60 |
| | $224,317.35 |
| TOTAL DISBURSEMENTS | 43,672.15 |
| FUNDS ON HAND April 30, 1969 | **$180,645.20** |
| ENDOWMENT TRUST FUND PRINCIPAL | $ 15,388.43 |

### FISCAL YEAR SUMMATION
### 1968-1969

| | |
|---|---|
| Unrestricted General Funds | $ 50,176.66 |
| Restricted Funds: | |
| Japanese Garden | 255.92 |
| Lilac Fund | 346.47 |
| Memorials | 13,354.41 |
| Education Program | 4,342.76 |
| Unit Council | 33,054.26 |
| Floral Hall | 78,528,76 |
| Rhododendron Trust | 242.48 |
| Endowment Trust Fund | 342.48 |
| | $180,645.20 |

ADDENDUM:

Price, Waterhouse gave the following opinion of the financial condition of the Foundation:

In our opinion, the accompanying statements of cash receipts and disbursements and securities owned and the related statements of changes in membership present fairly, on a basis consistent with that of the preceding year, the recorded cash receipts and disbursements by funds of The Arboretum Foundation for the year ended April 30, 1969, and the supplementary information on changes in membership for the year. In conformity with accounting practices acceptable for charitable organizations, the accounting records are maintained on a cash basis; accordingly, the statements do not reflect assets other than cash and marketable securities purchased therefrom. Our examination of these statements was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. It was impractical for us to extend our examination of receipts beyond accounting for amounts recorded.

s/Price Waterhouse & Co.

THE UNIVERSITY OF WASHINGTON

# Arboretum bulletin

A JOURNAL OF GENERAL HORTICULTURAL INFORMATION
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ARBORETUM FOUNDATION • SEATTLE, WASHINGTON 98105

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VOLUME XXXII, NUMBER 3

*Fall, 1969*

## TABLE OF CONTENTS

Financial Statement . . . . . Inside Cover
The Evolution of the Kinnikinick Border . . . . . George Schenk 48
Ginkgo Biloba . . . . . Jane Blogg 52
Arboretum Report, July 1, 1968 to June 30, 1969 . . . . . B. O. Mulligan 54
Myths and Legends about Trees and Shrubs, Part II . . . . . Mary Pinkham 60
New Arboretum Map . . . . . Center Spread
A New Foundation Arboretum Slide Program . . . . . Helen Moodie 65
A Study in Fall Color at the University of Washington Arboretum . . . . . J. A. Witt 66
Annual Meeting . . . . . 68
Kelly Nishitani . . . . . Doris Butler 69
New Members . . . . . 69
Some of Our Favorites . . . . . Gordon D. Marckworth 70
Recipients of Honors . . . . . J. A. Witt, Gordon D. Marckworth 70
Book Reviews . . . . . Bernice F. Smith 74
Eucryphia . . . . . Doris Butler 74

COVER PHOTO:

*Eucryphia glutinosa* flowering in the Arboretum

PHOTO BY J. A. WITT

# The Evolution of the Kinnikinick Border

George Schenk*

April 29. This last winter has changed my mind about the practicality of some of our common broadleaf evergreens. Temperatures down to 7° F. have poleaxed most plantings of *Nandina, Viburnum davidii, Erica vagans, Hypericum calycinum, Aralia japonica, Daboecia, Pernettya mucronata, and Raphiolepis indica,* delimbing or deleafing the lot. These shrubs have lost the battle for the third winter since 1955. That's once every four years or so. From now on I'll use them sparingly as details in plantings of more reliable material such as Scotch heather, sword fern, salal, tall and low-growing Oregon grape, and good old "Tam" juniper (*Juniperus* Sabina *'Tamarisci-folia'*), that panacea of the professional designer, that balm for all scraped ground.

August 6. After putting all writing, even correspondence, aside for the summer to tend my garden through an especially exuberant season of flower, growth, and fruition, I continue this article in a different frame of mind. My memory of winter is as vacant as a grasshopper's. There are a few holes in my garden where I grew California specialties such as manzanitas and tall hebes, but the old familiars are back in force here and all over town. Nandina has restored those fine scissor leaves that snip sun, light and shadow into confetti. *Viburnum davidii* (to the relief of landscape architects, who have caused armies of the plant to appear about our city) has renewed big horizontal leafage, so strong and stabilizing when grouped wtih fine-leaved material. *Aralia japonica* is fat-palmed and tropical again. *Hypericum calycinum* plantings, which in April were sodden and brown like sloshed tea leaves along freeways and campus drives, in June were curtains of rich yellow flowers on new wood. *Daboecia* and *Erica vagans* are in flower now, cherry and rose, on strong new branches. *Pernettya and Raphiolepis* have put up cheeky sprouts from below ground. I myself have resuscitated my old optimism. I begin to think of broader and more exotic leaves—loquat, *Gunnera, Eucalyptus.* If my compost heap is to be enriched, so will my experience.

I count all gardeners hardy optimists. Pessimists don't garden, unless you count as gardening such activity as perpetually whacking back an overgrown privet. Pessimists, do, however, serve as garden planners. Many parks throughout the United States attest to that. A garden planned by pessimists is an exercise of earnest dullness, like protocol. Such gardens may be alive clinically speaking, but are never lively, because the component plants are kept from interacting. Pessimists strive only for the reliable, the controllable, the predictable in design.

My own garden qualifies me to speak of the unreliable, the uncontrollable, and the unpredictable. The scene is nothing if not lively. On two and a half acres of hillside and hilltop I grow about 2,000 different species of plants, shrubs, and trees—more salient plant species, probably, than grow on the wet and dry sides of a good mountain. Combining and maintaining this absurd variety of plants in a coherent garden design has kept me entertained over the years. But entertainment is too flaccid a designation of my wrestling with Flora in 2,000 of her guises. I find myself thrilled and victorious, defeated and depressed, exhausted and refreshed. I am never bored or inactive for long. By observation, study and analysis, or by sheer gall, or often by accident (such as heeling in together new, unfamiliar plants and never getting around

*We are pleased to present this delightful article by Mr. Schenk, a landscape architect whose own garden is a treasure house of rare and unusual plants collected from around the globe.

to repositioning them) I have organized some exciting communities of plants within my garden. Visitors have rewarded my work with remarks that I cherish. One lady looked beneath my transparent apple tree, saw a pure lawn of *Veronica filiformis*, filmy blue in flower (that same blue invader of conventional lawns) and said sympathetically, "You can spray for that you know."

The smog of prejudice and incomprehension she left hanging over the blue lawn was cleared away several weeks later by an 8-year-old girl who came visiting with her mother, and who, the moment our backs were turned, sprawled out on that soft blue fabric, head-on-hands-on-elbows-on-flowers, looking up at us cheekily. Her mother was concerned. I was thrilled. I had received one of my greatest rewards as a gardener.

Some of my plant congregations are not so much rejected or embraced by visitors, as they are disbelieved. A close friend told me I was kidding when I showed him my combination of *Leycesteria* (leafy green canes tipped with purple berry brooches), *Equisetum Lyemale* (suspiciously like horse tail), rhubarb and bamboo, fennel, Joe Pye weed *(Eupatorium)*, yellow flag iris, and some grasses and other things. Nothing quite so wildly wonderful could have happened accidentally. I planned the combination quite seriously and I consider it one of my more successful feats of derring-do.

Other plant communities within my garden occur by a kind of evolution that requires a paleobotanical investigation to understand. The kinnikinnick border is a good example. Kinnikinnick lines one side of my drive, covering 150 by 15 feet of ground in association with a surprising variety of plants. The first of the associate plant species, a 20-foot swath of sunroses *(Helianthemum)*, is a holdover from a flower border that once occupied the kinnikinnick's territory. Sparing the sunroses, I scrapped the entire border planting, which was a kind of Good Will ensemble handed down by well meaning moralists who meant to cover my naked new garden: mole plants *(Euphorbia Lathyrus)* so named, I think, because the species invites moles; snow-in-summer (*Cerastium Tomentosum*), a vegetable avalanche that should be pitted again mugo pines instead of perennials; hydrangeas the color of old blue jeans.

In 1953, I collected kinnikinnick in the wild. I used a sharp spade to chop 120 sods from sheets of the plant growing on the Tacoma Prairie. Nearly all the sods lived, spread and covered the border within three years. Not until long after did I read that kinnikinnick can't be transplanted.

The second and the third of the associate plants came as stowaways in the sods. Soft, pale green, ovoid leaves of compatible size began to show among the shiny lance leaves of kinnikinnick. They belong to the creeping snowberry (*Symphoricarpos mollis*) a generally flat vine and a tidy companion for kinnikinnick. The sunny dryness of the border caused hidden runners of salal (*Gaultheria Shallon*) to come up cautiously, put up low canopies of branches and the rest of the shrub's, special, adverse habitat defenses. We have two distinct, ecological forms of salal in the Northwest. One grows lank, angular and deep green, with boisterously big, shiny leaves, in our Douglas fir woods. The other form I had known best on windy sea bluffs of the Pacific. My border salal is like the latter variety, compact in growth, the leather-grained, leather-hard leaf ovals less big and of a paler, muted color, like old morocco.

The year after I planted the kinnikinnick (and salal and snowberry), I noticed Oregon grape (*Mahonia aquifolium*) of especially neat form growing with sunflowers *(Balsamorhiza)* and short prairie grass, a length of miles between the railroad track and the highway in the vicinity of Cle Elum. I dug 36 clumps from the railroad right of way, using burlap, 6-penny nails, and twine, to secure greasy jobs of the native gumbo about the roots. I hoped that

the shrub's compactness (18 to 30") might be a fixed, geographic character. As I worked, a long chain of army trucks stopped along the road. The boys broke out rations, watched my incomprehensible labor in the hot, autumn sun and jeered, but not too spiritedly. If I was a nut digging weeds, I was a free nut, anyway. They drove on and I loaded 36 packages trussed in clay-sopped burlap into the trunk and the back seat of my old Chev, making it instantly older.

Planted along the back of the kinnikkinnick border, the Oregon grape eventually grew six feet tall before I decided that the shrubs represented no special geographical race. Wind and snow and intense sun had compacted them where I had found them. Pruning has supplied the same restraint, pruning back hard every spring immediately after the flowering and fading of the popcorn ball heads of yellow flowers. With pruning Oregon grape ranks first in garden value, it seems to me, of native shrubs. Without pruning Oregon grape tends to become a shapeless sprawl. Cutting from the top, as I do, induces the shrub to stool outward widely. I cut unwanted trunks at soil level. (Pruning side branches of Oregon grape will induce it to climb 10 to 12 feet of wall, in as many years, without producing stolons in the meantime.)

The sun rose x kinnikinnick x snow berry x salal x Oregon grape marriage was well settled and established when about eight years ago a *Cotoneaster horizontalis* appeared in their midst, planted very likely by a bird, who thus expressed one of the most constructive criticisms my garden has ever received. Now the fan branches of the *Cotoneaster* thrust eight feet wide over the carpet of kinnikinnick, forming an undeniably intelligent landscape feature. Sword ferns have cropped up in the kinnikinnick, planted by spore-bearing breezes. I pull out those that land in awkward places. Others seem right, and I leave them.

To leave or not to leave the swath of sunroses gave me pause for years. I had planted a collection of sunrose colors, a child's splatter of milk, peach, butter, beet, chocolate, and tomato. Each year as this bash of colors grew brighter, I grew more embarrassed. I was under the influence of picture articles in garden magazines showing tasteful color harmonies. It was for me a time of *Gypsophila* beneath "shell-pink" roses. Each spring I came closer to plucking out the offending colorama. People prevented me; I welcomed their intervention. Through two springs, I remember, the garbage man dissuaded me by saying that the sunroses were one of the prettiest things he saw on his route. The friendly garbage man left finally, and in the years after it has been Pablo Picasso and Roberto Burle-Marx who have kept me from floricide. Picasso's paintings in books and museums and Burle-Marx's landscape gardens in Brazil have restored and encouraged in me the inner child, delighted with bright, active color dramas. (Even before I was a child I must have been the equivalent of a New Guinean or a Colorado Indian.)

I remember Burle-Marx saying, "It is only after I have finished my work and stepped back that the garden begins to live". Nowadays I stand back appreciative of the sunroses, largely a passive observer of the evolution of the kinnikinnick border. I do have to prune to maintain a balance of flatness and tallness, mass and space. The artist (the gardener) in me demands that. I have found in recent years that I must prune out a considerable pile of salal once a season (the plant accelerates) in order to keep salal from submerging the kinnikinnick. But the balance in strength between the kinnikinnick and the sunroses seems perfect and permanent. The kinnikinnick has laced its branches connubially with those of the sunroses, forming a doubling of fine textures as acceptable as that of kinnikinnick and creeping snowberry.

Just now (August) the sunroses carry rods of blunt-beaked seed heads. Their

Lively congregations of plants, such as this "happening" outside my front door, provide the gardener plenty of entertainment. Clockwise, beginning at lower right: thyme, *Calluna vulgaris 'Pygmaea', Sedum rupestre, Lysimachia vulgaris.* The tree at center is a pink dogwood past flower. Photo by Don Normark.

opening segments are a bit like the opening jaws of chameleons. What new, hybrid colors will they scatter down in the mixed branches? The length of the border, kinnikinnick carries thousands of clusters of lacquer-red berries that will stay to make bright holiday decoration, and the creeping snowberry, woven in the kinnikinnick, is tufted with mistletoe-like fruit, more generously than in years past.

# Ginkgo Biloba

Jane Blogg*

In the measurement of time when one contemplates 200 million and more years into the past, the very thought is overwhelming. It is to this remote age that the ancestry of the *Ginkgo biloba* or Maidenhair tree can be traced. Strangely enough the Ginkgo is not too well known among our deciduous trees even though it is a true native of the northwest. The story of how it has been returned to us and is finding its place among our other native trees is truly fascinating and romantic.

Ginkgos evolved from seed bearing ferns and first existed along the borders of shallow seas where the Mesozoic reptiles fed upon them, forcing them over the centuries to retreat to the low rising hills, evolving along this migration, into trees. As trees of 100 feet and more in height they were out of reach and free from destruction of the great dinosaur. which also fed upon them.

Picture if you will these trees, moving ever upward from the sea as land formations developed, moving through great geological periods, spreading themselves over great continents as they formed, from the warm humid valleys of Alaska, Greenland, Siberia, southward to America, Africa, Asia and Australia. Only in the Antarctic did they fail to thrive. Some members of the Ginkgo family formed colonies in what is now North Carolina and were widely distributed in the Dakotas, Wyoming, Montana and Washington.

During the Tertiary period 150 million years ago great land upheavals forming the Pyrenes, Alps and Andes caused the great forests of the trees to fall. Others took their place but in more isolated groups. Eventually these fell to the climate changes of the ice age. With the Miocene epoch over 15 million years ago, in what is now Oregon and Washington, the formation of the Cascades cut off the summer moisture from the sea. This combined with the cold winters wiped out the forests in this area. A trip to the Ginkgo Petrified forest at Vantage, Washington, offers evidence of the great trees of that age.

With the change in this era came lava flows which covered the area and filled the basins. Fallen trees, some of them already covered with water became sealed in with the lava. Silica and other minerals also became sealed in with the lava. These and other minerals were forced through these logs by steams and gases. These minerals impregnated the open pores and surrounded or replaced the cell walls of wood which eventually became petrified, thus providing a record for our time of the variety of trees including the Ginkgo which once thrived here.

Only in East Asia where the progression of the ice flow was halted was the Ginkgo able to survive and then in rare numbers. Here history is confused. Some botanists claim to have found it growing in the Yezo forests of northern Japan, but the Japanese believe it was brought from China (where it was known as the "Duck's Foot") by Buddhist monks more than 1000 years ago. In any event, the tree found sanctuary in temple gardens and in time became known as the Sacred Gingko.

In the Orient the Ginkgo fruit has been used as an expectorant and a cure for cancer when eaten raw; however the toxic effects of raw seed sometimes prove fatal. Roasted fruits are considered a delicacy for festive occasions but even they have a slight toxic effect on children. The seed also has been used as a cosmetic when soaked in wine while the Chinese have even used the pulp of the fruit combined

*Mrs. Ainsworth Blogg is a member of Unit 73, the Kelley Nishitani Bonsai Unit. She is also Northwest Representative on the Board of the American Bonsai Society, frequently writing for that and other publications.

with lye to make soap. The conclusions drawn are that the Chinese are most versatile in the use of the fruit of this tree.

The wood of the Ginkgo has limited use because the grain is much like the white pine; however it has been used in making abacus beads, chessmen and is widely used as a base for fine lacquerware.

In Japan the Ginkgo leaves are ground for fertilizer and are used as an insecticide when spread around the base of plants. School children place Ginkgo leaves in their books to "scare the worms away." Girls' hair styles and artists' designs derive inspiration from the shape of the leaf.

But how did it return to one of its native habitats? Dr. Englebert Kaempfer, a ship's doctor connected with the British East Indies Co. is believed to have brought one back to Holland around 1700. Some are of the opinion that it is perhaps the famous old Ginkgo in the Botanical Garden at Utrecht.

As far as records show the tree was first introduced into this country in 1784 and although that one died there is one of comparable age still growing in Philadelphia. In longevity it is surpassed only by the Bristlecone Pine (4600 years) and the Sequoias (3500).

From this ancient and romantic background rises the question of the place of this tree in the twentieth century. The Ginkgo is free from serious pests and diseases, is not particular as to soil and shows marked tolerance to city smoke and fumes. In fact it is a remarkably fire resistant tree. It is becoming known as a fine street tree reaching heights of 40 to 80 feet. It grows slowly in the northwestern area of the States. I have watched one in a neighbor's garden for the past thirteen years and I doubt if it has grown six feet. In early years its growth habit is somewhat upright like a poplar, but as it ages it becomes more spreading in habit similar to our fir trees. The fruit is undesireable, being messy and dirty as well as having an unpleasant odor. However, most of the trees available here have been grown from cuttings of the male tree and since it is dioecious the chance of enduring its only unpleasant factor is remote.

For more technical information, it stretches 100 feet high with a girth of 20 feet. Its bark is greyish, deeply furrowed in old trees but on the smooth side when young. Branches are whorled from the trunk at irregular intervals. It has sharp conical buds with bright brown scales. The short shoots are crowded with leaf scars of past years. These continue for many years and then like the larch or cedar suddenly lengthen into long shoots. In spring the leaves appear in whorled clus-

*(Continued on Page 72)*

*Gingko Biloba* in the Arboretum.
Photo by J. A. Witt.

# Arboretum Report, July 1, 1968 to June 30, 1969

Brian O. Mulligan

## 1. Improvements and Maintenance

The most conspicuous improvement during this year has been the replacement of the timber steps at the northeast corner of Rhododendron Glen with a new flight made of used railroad ties which should last considerably longer than the eighteen years of the older set. The opportunity was also taken to widen this path to the Glen, made necessary by the growth of the adjacent rhododendrons.

Several new benches have been constructed and set up this spring. One, a memorial to the late Ida Pernatt, donated by the members of Arboretum Unit No. 59 and made of concrete aggregate by the University's Physical Plant Department, was placed at the top of the steps above Arboretum Drive facing Rhododendron Glen. Another, in memory of the late Seattle landscape architect, Otto E. Holmdahl, was also built for us by the Physical Plant and set at the north end of Foster's Island facing Union Bay. This, which is eight feet long and constructed with a wooden seat and back on a concrete base, was funded by a bequest left to the Arboretum by Mr. Holmdahl. We are planning to have another bench of similar type made and placed this summer in the same area, at the south end of the Waterfront Trail. Two others, made by our own crew from native Douglas fir logs set on concrete pedestals and footings, have been placed on Azalea Way facing Rhododendron Glen and near the west end of Loderi Valley. Two more, given by the Arboretum Foundation, were made by a contractor and placed in the Japanese garden.

During the fall considerable time and effort was expended on laying down new drains on the west side of the Winter Garden, an area which has always suffered from too much natural moisture, especially during the winter months. 256 feet of four-inch, 166 feet of six-inch drain tiles were laid with 50 yards of washed gravel on top of them, so we expect an improvement there this winter and in future. Problems of drainage are numerous in many parts of the Arboretum and will require continual work each year for a long time to come if they are to be reduced and controlled.

Almost 2,500 lbs. of a commercial garden fertilizer was spread in October on all areas of poorer soil types in the Arboretum, or where there was a known need for it. This extended from Foster's Island at the north end, along Azalea Way, and on both sides of Arboretum Drive as far south as the holly collection.

During November about 340 lbs. of Casoron was applied to control horsetail (*Equisetum*) in various areas including Rhododendron Glen, the Japanese garden and along Azalea Way. Its beneficial effect is noticeable in the following year, although additional treatments are usually necessary to eliminate this serious weed.

Spraying programs for various pests and diseases have been regularly applied and take up much time and labor. This season tent caterpillars were more numerous than for several years past, but spruce aphis remarkably scarce.

In the spring (March and April) some of the trees and shrubs near the north entrance were transplanted in preparation for our anticipated new administration and other buildings. Two weeping Japanese cherries, a large specimen *Abies* X *insignis*, a black gum (*Nyssa sylvatica*) planted Nov. 1955, and a white spruce (*Picea glauca*) were moved by a contractor; other smaller shrubs by our own very competent crew. Some native maples and other trees were also cut and removed from the prospective building site.

In the Japanese garden 400 feet of

bamboo matting was fastened on the inside of the Cyclone boundary fence on the west side of the garden, thus completing its covering on the north and west sides where it was not hidden by plants. A donation from the Japanese garden fund of the Arboretum Foundation paid for this operation.

Three new signs describing the Arboretum's purposes and administration have been set up in prominent positions where they can be seen by visitors. Funds for these were provided by Arboretum Unit No. 41, which also financed the production of about thirty new individual signs made of western red cedar lumber. These are principally for the more important plant groups, including the magnolias, spruces, mountain ashes and lindens, but also designate particular sites such as Woodland Garden, Loderi Valley and Rhododendron Glen. They replace the old hand-painted signs which have been in use for 17-18 years.

**2. New plantings**

These began in early October with the advent of our fall rains and continued quite steadily until just before Christmas. During this period we replanted the bed of heathers near the drinking fountain beside Arboretum Drive, did some miscellaneous planting on the rock garden and in the Japanese garden, and set out a new bed of peonies in ground which had been prepared earlier for them, on the west side of Arboretum Drive just north of Rhododendron Glen. This includes seven shrubby types—all Saunders hybrids from New York state—and six herbaceous kinds, mostly from the same excellent source. Several flowered for the first time this spring, and in the future should make an attractive group. Some additional trees were placed in December around the lagoon across the road north of the offices; amongst them were two recent introductions of sweet gums (*Liquidambar styraciflua*) from California and an interesting poplar from N.E. Asia, *Populus Maximowiczii.* Six young paper birches *(Betula payrifera)* were also added here for their winter effect.

The cold weather at the end of December and again in the latter part of January seriously interfered with our normal planting program, which usually is only interrupted briefly at this time of the year by freezing weather or snow. In December we were only able to plant on five days and in January on two. On Jan. 8 we started to plant a new group of spruces and birches on the bank just east of the Museum of History and Industry, but were unable to complete it until Feb. 24. This comprised 27 plants of spruces, representing eight species, and 17 birches, of six species. If successful, this will not only provide a buffer between the Museum and the traffic coming off the Evergreen Point bridge but also extend our information about the behaviour of these trees on a new and different site.

Additions were made during March to the main collections of alders and birches, located between Azalea Way and Lake Washington Boulevard; seven species of the former and nine of the latter were transplanted from the nursery. In May we replaced as many as possible of the *Cistus* killed during the winter, from plants fortunately propagated during the previous summer. These amounted to six kinds, totalling about forty plants. We also filled some of the gaps in the *Eucalyptus* collection, due to the same cause, with 18 plants of four species. Replacements were likewise made in the *Ceanothus* collection, which had, as expected, suffered severely during December and January.

The northeast corner of the Japanese garden was improved by the addition of a number of mature plants of azaleas and *Pieris japonica,* and two large groups of *Stephanandra* and *Spiraea japonica,* as well as an extension of an earlier planting of *Liriope* as a ground cover, south of the north entrance.

The total number of woody plants set out between Oct. 1968 and June 1969 was

888, of which 190 were trees and 698 shrubs of all sizes. This compares with 962 plants in the 1967-68 season, and more than 1000 in 1966-67.

### 3. Acquistions

(a) *Plant material*

Of the total of 743 acquisitions under this heading in twelve months 415 represented plants, cuttings or scions, the balance 328 packets of seeds. In comparison with the previous year this showed a considerable decrease (247 items) in fresh plant material, a small increase (27) in seeds received.

Of particular interest among the former was a collection of 23 kinds of shrubs purchased from a nursery in England, from which we also received a gift of ten kinds of *Clematis* new to our collection; five more hybrid peonies acquired from the Saunders Nursery in New York state; eight new hybrid magnolias (*M. liliflora* X *M. stellata*) sent us by the U.S. National Arboretum; two plants of the rare and handsome Chinese *Populus lasiocarpa* received from the Royal Botanic Garden, Edinburgh, via the U.S. Dept. of Agriculture; three new forms of *Magnolia grandiflora* from the Saratoga Horticultural Foundation, Calif.; 300 bulbs of five lily hybrids, purchased with funds from Arboretum Unit No. 47, for summer display along Arboretum Drive E. and elsewhere; a collection of 53 kinds of Box (*Buxus*) from Mr. H. J. Hohman, Kingsville Nursery, Maryland, and 37 kinds of shrubs or trees from the U.S. Dept. of Agriculture Plant Introduction Station, Glenn Dale, Md. Many of these originated from seeds collected in Taiwan, Japan or Korea; ten are hollies (*Ilex*) and eleven rhododendrons. Scions of the beautiful Himalayan birch (*Betula Jacquemontiana*) received from the Jardin des Plantes in Paris have been successfully propagated. A gift of 14 kinds of *Clematis* came from Arboretum Unit No. 32.

Seeds have been received as usual from many institutions and some individuals throughout the world. Some of these have been the Principal Botanical Garden of the Academy of Sciences, Moscow; the Dept. of Science and Industrial Research at Christchurch, New Zealand; the Royal Botanic Garden, Sydney, Australia; the Royal Horticultural Society's Garden, Wisley, England; the University of California's Botanical Garden, Berkeley, and the Arboretum at Davis, Calif.; the American and Scottish Rock Garden Societies, and the English Alpine Garden Society, besides many more. These are invaluable sources of new or rare material and we are glad to be able to exchange seeds with them.

(b) *Books*

A list of the principal new acquisitions during 1968 was published in the Arboretum BULLETIN, Summer, 1969, pp. 44-45. Outstanding among those acquired in the first half of 1969 are:

*Trees*—Andreas Feininger (New York, 1968), from Unit No. 75

*Trees for Architecture and the Landscape*—Robert Zion (New York, 1968) from Unit No. 27

*Flora Europaea,* Vol. II—T. G. Tutin *et. al.,* (Cambridge, England, 1968) from Unit No. 36

*The Heathery,* 6 volumes—H. C. Andrews, (London, 1804-1812) from the Bloedel Foundation

*Icones Plantarum Asiaticarum,* Pt. IV only—Wm. Griffith (Calcutta, 1854)

*Flora of Alaska*—Eric Hulten (Stanford University Press, 1968)

*William Bartram's Botanical and Zoological Drawings*—J. Ewan (Philadelphia, 1968) from Hawthorn Hills Garden Club

*A Botanist's Repository,* 10 vols.—H. C. Andrews (London, 1797-1816) from the Friends of the Arboretum

A collection of 68 titles generously donated by Mrs. A. J. Krauss including John Evelyn's *Silva,* 4th edn. (1706), a set of fifteen volumes of Maund's *Botanic Garden* (London, 1831-39), a number of works by E. H. Wilson, and three volumes of William Robinson's *Flora and Sylva* (London, 1903-5).

(c) *Slides, films and photographs*

During the year Mr. Witt has taken 349 slides for the collection. Of these 71 were

photographed during our heavy snow period in January. 41 sets of slides have been lent, usually for talks to garden clubs or Arboretum Units, the majority being requested in April and May.

A second short motion picture (10 minutes) has been completed by Mr. Witt and Mr. van Klaveren, our propagator, showing methods of grafting plants. 86 black and white photographs have been added to the files, generally taken in the Arboretum but a few of wild plants in S.W. Oregon and in the Rocky Mountains area.

(d) *New equipment*

The following were purchased from our University budget: a Bunton 32-inch rotary power mower; a Jacobsen 21-inch rotary mower; a hydraulic crane for the pick-up truck; a Homelite super-XL 24-inch chain saw with spare chain.

Acquired with donated funds were: 135 mm. camera lens, a light meter and flash equipment for use in the educational program; a 12-inch bucket for the Oliver back hoe; and from Mrs. A. R. Kruckeberg, a Nikkormat 35 mm. camera with 55 mm. f.3.5 Auto-micro-Nikkor lens to replace our older Kodak Retina for color slides by Mr. Witt.

(e) *Principal other gifts*

| | |
|---|---|
| From Friends of the U. of W. Arboretum, for various particular purposes | $9,545.00 |
| Arboretum Unit Council, for maintenance | 2,000.00* |
| Seattle Garden Club, for maintenance | 1,500.00 |
| Seattle Garden Club, for slide cabinet | 500.00 |
| Estate of late Mrs. H. Bittman | 1,000.00 |
| Arboretum Unit #41, for signs | 425.00 |
| Arboretum Unit #33, for building fund | 200.00 |

Many more lesser amounts, received from numerous Arboretum Units, garden clubs and individuals. Also the day's work contributed by many Unit members under Mrs. Jack Docter on April 23.

## 4. Advisory and Educational Work

(a) *Advisory*

The Director and Assistant Director have been called on by the State Highway Department for help and advice in plantings along Interstate 5. Much of this was in the form of trouble-shooting, advising on plant materials, and on general horticultural problems.

Similar help was and is being given to the city of Seattle landscape architect's office, particularly in their street tree program. The Assistant Director has been advising in "Operation Green Triangle", a cooperative program in which street triangles are being converted to green areas.

Advice on tree selection and plantings was also given to the communities of Medina, Bothell, Kent, Ellensburg and Richland. The Director is assisting the landscaping program of the University branch of the Y.M.C.A.

(b) *Educational*

The demand for speakers from the Arboretum staff continues at a high level. From July 1, 1968, to June 30, 1969, more than twenty lectures and demonstrations in pruning and propagation were given. In addition there were fifteen tours of the Arboretum scheduled for the same period.

A number of short courses were offered

*Ed. comment*: Price, Waterhouse, as shown in their statement of our financial condition published on the inside front cover of this issue of the *BULLETIN*, indicate that $3,972.00 has been given to the University during our fiscal year. In addition, a pledge of $82,500.00, plus $5,139.15 (the total amount of the Spring Plant Sale), has been made to the Building Fund. The Foundation also bears the expense of approximately $5,000.00 annually for publication of the *BULLETIN*.

through the facilities of the College of Forest Resources. These included six tours on "The Arboretum in Depth"; "Winter Propagation, Grafting Ornamentals'" and "Summer Cuttings" taught by Mr. van Klaveren; four pruning demonstrations by Mr. Narro; "Nature Photography" taught by Mr. D. F. Riecks; and "Identification of Trees" by Prof. Frank C. Brockman.

(c) *Exhibits and Shows*

The Arboretum entered displays in two rhododendron shows. In the first, the Early Rhododendron Competition April 12 and 13, 1969, it won the Sweepstakes trophy and the Pat Ballard Memorial Award for the best Lepidote truss or spray. The entry to the Seattle Rhododendron Society Show, May 9, 10 and 11, 1969, was noncompetitive. An exhibit of various *Acer* species and cultivars was the theme of the display put on for the Washington State Federation of Garden Clubs' meeting in Seattle in early June. Some twenty young species of maples growing in continers were feature.

(d) *Meetings attended*

The Director and Assistant Director attended the annual meeting of the American Association of Botanic Gardens and Arboreta at San Francisco, September 15-17, 1968. The Director remained through September 20 to attend the annual Congress of the American Horticultural Society, reading a paper as part of a panel on Pacific Coast Horticulture. On September 21 he visited the Saratoga Horticultural Foundation, Saratoga, Calif. Mr. Witt represented the Arboretum at the regional meeting of the International Shade Tree Conference in Boise, Idaho, February 10-11. Mr. Mulligan attended the Board of Directors meeting of the American Horticultural Society at Williamsburg, Va., March 14-16, and the Morton Arboretum Advisory Committee at Oakbrook, Ill., May 28-29, 1969.

**5. Plant Material Distributed**

In October 1968 a list of 49 kinds of surplus young plants was sent out to 37 institutions or individuals in the U.S.A. and Canada with which we exchange plant material. 18 parcels were subsequently distributed as a result of this offer. During the year a total of 52 consignments were sent, of which six went overseas, including a parcel of Japanese cherry scions to India. Scions of our Japanese maples are much in demand.

During December 82 surplus plants of rhododendrons from the nursery and elsewhere were transferred to Echo Glen Children's Center at Preston, but because of the subsequent unusual cold weather not all have survived. In March and April a considerable variety of larger surplus young trees in the nursery were also removed to the same location where they will both serve to landscape the grounds and also provide us in future with information about their behaviour under very different conditions from Seattle. The total number then moved was 119 trees and shrubs, representing more than fifty different species.

The annual seed exchange list, containing 288 items (in 1968, 241; in 1967, 281 items) was mailed in January. Requests were received from 194 institutions or correspondents throughout the world, and 3447 packets sent to them. Most of the work of collection and cleaning was done by a partially retired member of our staff, Pablo Abellera. The packeting and dispatching was again most efficiently carried out between February 10 and June 3 by several members of Arboretum Unit #25 under the leadership of Mrs. Kenneth Mead, to whom we are always indebted for this invaluable service.

In November 1968 we furnished the United States Department of Agriculture, Agricultural Research Service, with about sixty pounds of fresh leaf and twig material of six conifer species to be used in a screening program in a search for an anti-

cancer drug. Species sent were *Cupressus Abramsiana, C. pygaea, C. Sargentii, Thujopsis dolobrata, Tsuga Mertensiana,* and the intergeneric hybrid *Cupressocyparis Leylandii.*

## 6. Staff and Budgets

The permanent staff remains the same size (16 persons) as it was a year ago. The only change is due to the retirement of Gerhard Gilbert at the end of 1968 after more than fourteen years' faithful service. He was succeeded as gardener by Kenneth Silvernail, who transferred from the University grounds staff.

The part time staff consists basically of three workers, a janitor, nurseryman for the greenhouses on Sundays, and gardener in the Japanese garden. These were augmented by one extra groundsman in April, May and June on our regular University budget, another who started June 11, and a girl student-helper in the greenhouses, half time, from June 23, 1969. In addition, we have a guard in the Japanese garden working part time, and a graduate student, Miss Sharon Collman, working in entomology under Dr. R. Gara, hired on a half-time basis in September. Besides forming a collection of insects found in the Arboretum she is also preparing a series of informational leaflets on some of the *principal* pests of ornamental plants grown here.

Using other non-University funds donated for maintenance we hired one man in late March and added another in late May. This additional help has enabled us to accomplish much more weeding and other work than usual, and we expect to be able to continue it until September, to prepare for the International Botanical Congress.

### Miscellaneous

(a) *Traffic count outside offices*
(July 1 - June 30)

| 1968-69 | 1967-68 | 1966-67 | 9 yr. aver. |
|---|---|---|---|
| 148,913 | 158,474 | 155,844 | 149,807 |

The lower figure for 1968-69 was entirely due to the cold months of December and and January.

(b) *Telephone inquiries for information*

| 1968-69 | 1967-69 | 1966-67 | 8 yr. aver. |
|---|---|---|---|
| 3,181 | 2,615 | 2,283 | 2,261 |

(c) *Visitors to Japanese garden*

| | | |
|---|---|---|
| 33,792 | 34,692 | 38,309 |

(d) *Weather*

December 1968 and January 1969 produced the coldest weather experienced in Seattle since November 1955. As a result we lost a number of less hardy trees and shrubs and many more were severely damaged. An account of its effects appeared in the Summer issue, 1969, of the Arboretum BULLETIN. 1968 gave us the heaviest rainfall ever recorded in Seattle; at the Arboretum we measured 51.60 inches, more than ten inches above our average figure. On the other hand July supplied 352 hours of sunshine, an exceptionally high figure which was probably at least partially responsible for the remarkable flowering of many trees and shrubs this spring.

The magnolias, cherries, crab apples, and later azaleas and mock oranges (*Philadelphus*) were particularly floriferous, but likewise many other smaller groups and individual plants, including the *Styrax* species and *Cornus Kousa.*

Finally, it is proper to acknowledge the continual work of the staff, both indoors and outside, which constantly maintains and improves the Arboretum and its facilities for the benefit of the public and the Univeristy. Without their year-round labors and care it would soon deteriorate and lose its value and appeal to our numerous visitors from many states and countries.

# Myths and Legends about Trees and Shrubs*
# Part II

Mary Pinkham

This entire dissertation could be devoted to the *oak* alone. It was thought to be the first tree and all others to have sprung from it. The druids believed that fairies lived in the trunks of the oaks and so held their mystic rites in groves of oaks venerating them for strength and endurance. Oak was believed to be Jove's favorite tree because he could strike it with lightning and it would not burn. Lightning rods were made of it later by people who were not afraid of incurring Jove's wrath by using his wood. Some legends say that Jason's Argo was made of oak for its strength and durability, and that the prow spoke and directed his voyage. (If you recall, the beech was another contender for this honor.) It was an oak branch that caught in Absalom's hair causing him to be slain by enemies. Ezekial was angered by the image of heathen gods who stood in every oak. Merlin worked his magic under an oak. Aesop said that sleeping under an oak kept you from getting old because the oak is ageless.

There is a Roman legend of a lawless and irreverent woodsman who cut an oak sacred to the Goddess Ceres. He was punished by everlasting hunger. One large oak tree was cut down by St. Boniface because he believed it must be an idol to be worshipped. When it finally fell to the axe, it broke into four parts forming a cross. Many of the people felt this was a horrendous sign but the saint claimed it was approval for his cutting down a wicked idol, and so the wood was made into a great oratory.

Although there are many barbarian connotations to oak, it is nevertheless also the tree of Mary. There are stories "authenticated" of statues of the Virgin made of oak which have come alive and saved their believer.

Whereas, in Greek legend the roots of the oak go to Hades, to the Christians the branches prayed to Heaven. In Ireland, St. Bridget dwelt in the core of an oak and there founded the first community of women in Ireland. And St. Columbia had a favorite oak from which a tanner ripped some bark to tan shoes. He was punished by leprosy—a skin for a skin.

My favorite story of the oak is the legend of Raphael's "Madonna of the Chair." There was once a Father Bernardo, a hermit, who lived in the dense woods of northern Italy. He lived in an oak tree and from it got his shelter and some of his food. Extra food and care were provided by a loyal girl named Mary. During his life the tree was spared but as he was dying he realized that it would some day be cut down, and his last wish was that somehow God would preserve for eternity the beneficent oak and the lovely girl who had been so tender and kind to him. A few years later the tree was cut down by Mary's father and made into casks, tables, and chairs. Mary was married and had two little boys, one an infant nursing when a stranger happened by and saw the beautiful sight of Mary sitting with the babe in her arms and the older child standing

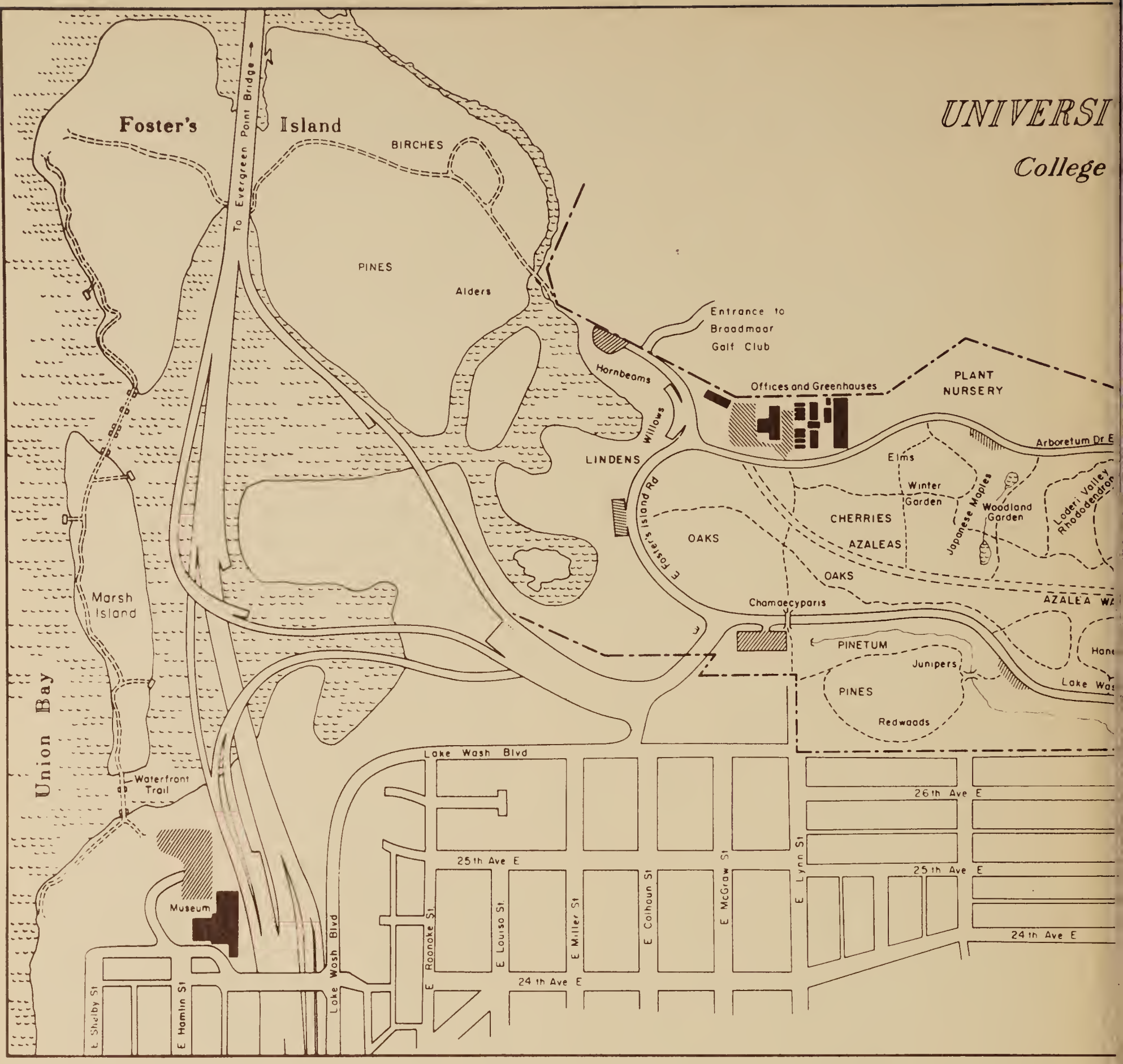
*This essay is Part II of an informal discussion about superstitions related to plant life. Part I was published in the Summer Issue of the University of Washington Arboretum BULLETIN, Volume 32 Number 2, pages 32-35.*

The insert in the center of the BULLETIN is a copy of the new map which will be available for distribution from the Arboretum office soon. The BULLETIN and the map have been stapled separately. By removing the middle staple in the insert, the two may be easily separated.

## ABOUT THE ARBORETUM

It is the purpose of the University—within the space and environmental limitations of the Arboretum—to establish and maintain collections of all the types of ornamental woody plants that the climate and soils of the Pacific Northwest can support, and to disseminate knowledge gained about their cultivation and care. Beyond the accepted attainments of an arboretum and the express purposes for its creation, the University of Washington Arboretum is dedicated to fostering public knowledge in such areas as natural history, ecology, interrelation of environmental factors, outdoor-recreation management, urban-related studies, and conservation. Research and educational programs will continue to be conducted and expanded to enhance these community services. Public classes are described quarterly in *Spectrum* magazine, a University publication available without charge by writing or phoning 400 Lewis Hall (543-2590). Group tours may be arranged by phoning the Arboretum office (543–8800) well in advance of the intended visit.

Arboretum grounds are open from 8 a.m. to sunset. Postcards and arboretum publications are available at nominal cost in the Visitor Center; a reference library and special exhibits are also maintained. Comments and questions are welcomed.




## FLOWERING CALENDAR

### JANUARY AND FEBRUARY

camellia • heather • viburnum • witch hazel • silk tassel
alder • willow

### MARCH

camellia • rhododendron • quince • Japanese spring cherry
magnolia • winter hazel • manzanita • Cornelian cherry

### APRIL

camellia (height of season) • Japanese cherry • native dogwood
crabapple • rhododendron • service berry • magnolia
manzanita • andromeda • forsythia

### MAY (peak of flowering season)

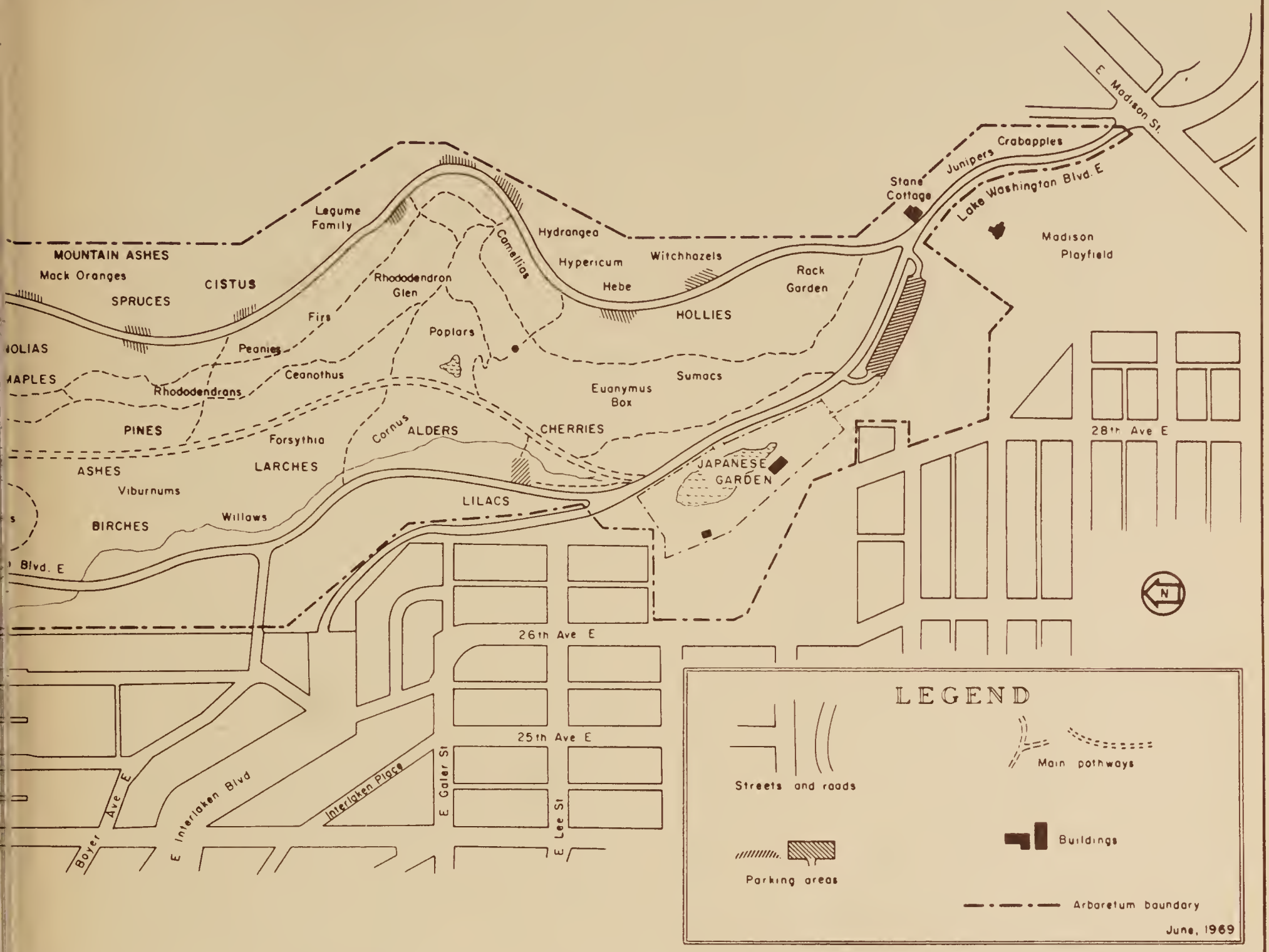
Japanese cherry • azalea • eastern dogwood • rhododendron
crabapple • redbud • ceanothus • broom • magnolia

### JUNE

azalea • rhododendron • mountain laurel • magnolia • tulip tree
Stewartia • Kousa dogwood • mock orange • rock rose • rose

# OF WASHINGTON ARBORETUM

*Forest Resources Seattle, Washington*




JULY AND AUGUST

catalpa • escallonia • hydrangea • sourwood • Eucryphia
silk tree • evergreen magnolia

SEPTEMBER, OCTOBER, AND NOVEMBER

native dogwood (second flowering) • Franklin tree • camellia
strawberry tree

## FRUIT AND FALL COLOR DISPLAY

AUGUST AND SEPTEMBER

mountain ash • crabapple • rose

OCTOBER AND NOVEMBER

azalea • crabapple • maple • sourwood • oak • sweet gum
sour gum • sumac • tulip tree • viburnum • witch hazel

DECEMBER (fruits)

cotoneaster • firethorn • Pernettya • strawberry tree
Washington thorn • Lavalle thorn • holly

## MAJOR AREAS OF INTEREST

The Arboretum is a uniquely enchanting complex of native trees and exotics selected from arboretums of many nations. Of the more than two thousand species of trees and shrubs growing on the 200-acre site, the principal collections in areas or along trails are listed here.

1. WATERFRONT TRAIL: an interesting hike along Union Bay from the Museum of History and Industry, across Marsh and Foster's Islands, to the Arboretum. 2. FOSTER'S ISLAND: a natural area partially planted with alders, birches, pines, and oaks introduced into the native setting; includes a marshland wildlife sanctuary. 3. NATURE WALK: a short jaunt through native trees. 4. WINTER GARDEN: collection of shrubs and other plants flowering between October and March; among them are witch hazels, viburnums, heathers, and early rhododendrons. 5. WOODLAND GARDEN: two ponds and a rambling creek compose an ideal habitat for a large collection of Japanese maples (original planting from Japan in 1940) and other plants enjoying a shady site. 6. LODERI VALLEY: shady woodlands planted with tree-type magnolias and selections of the best forms of hybrid Rhodendron Loderi, with blooms in April and May. 7. AZALEA WAY: the major trail through the center of the Arboretum, lined with Japanese cherries, azaleas, and eastern dogwood; in bloom from April to early June. 8. RHODODENDRON GLEN: flowering from early March to July or August, rhododendrons of all kinds, both species and hybrids, range from 12-inch dwarfs to 15-foot spectaculars, in a blaze of colors. 9. JAPANESE GARDEN: designed in Japan, a strikingly exquisite example of the Oriental philosophy of working with nature. The authentic tea house, focal point of the garden, was a gift from the city of Tokyo; the stone lantern was presented by the city of Kobe. 10. ROCK GARDEN: in a replica of an alpine ecology, determined little mountain climbers—heathers, heaths, dwarf conifers and cotoneasters, junipers, and selected rock-garden plants—abound in a sunny site.

nearby. He asked permission to paint the scene and his name was Raphael; the old hermit had his wish granted for the lovely Mary, and parts of the oak tree have been preserved forever.

The Mississippi Indians have a legend about a beautiful young brave named Wyot. When he was drinking at a spring a frog who was jealous of his beauty spat into the pond and poisoned it, causing Wyot to die. His last words were that he would be there forever nourishing his people. His ashes ascended to heaven and became a great star, and an oak tree grew beside the stream. The Indians sent birds up to ask the star what Wyot had meant by saying he would nourish them forever, but only the hummingbird was able to reach the star, and he reported the following: "The tree I have given to you with my body is for the sustenance of all people and animals and birds. Man will make a flour of its nuts and this flour can be made into cakes." The feast of the acorns became a yearly ordinance, and the Mississippi Indians still use the oak for food.

Oak was the calendar by which some planting was done. Corn could not be planted until the leaves of the oak were as large as gray squirrel's ears. There is even the following ditty:

> When the oak comes out before the ash
> You'll have a summer of rain and splash
> When the ash comes out before the oak
> You'll have a summer of dust and smoke.

We had such an equivocal summer that I checked with Mr. Witt to find out how accurate the prediction had been this year. He said we had many different kinds of oaks and ashes and that they probably alternated coming out, so I guess the prediction was quite accurate, both dry and wet. Other folklore had it that the size of the crop of oak apples foretells the bounty of the next year, and that a handful of galls mixed with oats and given to black horses makes them dapple gray.

The reason that Broadway in New York City has an appreciable bend at about 8th is because an oak tree was standing in the churchyard of St. Paul's and the community demand for the woodsmen to spare that tree allowed the oak to remain and a main thoroughfare to go around. Just this fall, in Oley, Pennsylvania a road was rerouted through donated farmland adjacent to a main road so a 200-year old oak could be spared.

If you wish to be really happy and secure, spend some time under an *ash*. It is a beneficent tree because it repells snakes and exorcises evil spirits, hence amulets and crosses are made of ash. Farm implements were reputed to be more productive if made of ash. Early farmers always planted one acre of ash to twenty of oak. This was probably because of the soil requirements but superstition had it that the ash grove protected the oak grove. In case you are rusty on the subject, the first Norwegian man was made from a twig of ash. Achilles had an ashen spear, and cupid's bow was of ash. Ash berries are used as prayer beads. Though the druids dwelt amid the oaks, they still planted an ash as the sacred tree. The reason all Norse boats have ash planks is that Thor was rescued by an ash plank. Some early folk thought the foundation of the world was an ash tree although the Mayas knew it was held up by the copal tree. For interested parents, the child's first food should be ash sap. A hammock is safe if hanging on an ash tree, and cows stay in milk if near ash.

The *cypress* tree always seems to symbolize death. The dark foliage is rather ominous and once cut it never springs up again. Cemetery plantings go in heavily for them because they are a good landscape tree, and this seems to add to their funeral connotation. Orvid sang a tale of a youth, Cyparissus, who shot his pet deer by mistake and in remorse begged to die himself. Apollo made him into a cypress tree so he could preside over the future life of his deer. Many other tales of the classical world regard cypress as belonging to the nether-world. The western civilizations

treat the cypress as a symbol of sorrow while the Far East considered it full of grace and joy. (Perhaps this is one of the reasons "Never the Twain Shall Meet.")

The *elm* symbolizes the dignity of life, and the spreading of its great branches denotes strength. Dreams hover in its branches ready to pounce upon the unwary. One of the fairest treaties ever made with the American Indians was signed under an elm tree with William Penn presiding. Washington took command of the Continental Army under an elm tree which is still preserved in Cambridge. There is a superstition in Ireland of the Howth family who fears it will die out when their family elm dies. It loses a branch whenever there is a death in the family.

The reason the *tulip* tree leaves have a bite out of them is that the devil did it.

The word for *apple* is the same as "evil" in Latin, and that may be the cause of the assumption that the tree in the Garden of Eden was an apple. The Bible merely refers to "the tree" growing in the garden. An apple in Mary's or Christ's hand symbolizes salvation, but in Adam's hand means sin. An apple a day is supposed to keep the doctor away. Atlanta lost her race by stopping to pick up a golden apple; the wicked fairy poisoned an apple for Snow-White; Tantalus couldn't reach an apple hanging on a tree, and from this we get out word "tantalizing." Cut an apple crosswise and you have a perfect star. This appears as magic to children. Some fabled girl was given as many yards of cloth by her father as the unbroken length of skin she could peel from a single apple. School girls used to count the seeds in the apple they were eating to determine their future.

There are many varieties of *pine* in the Arboretum. Cybele, a Phrygian goddess turned a shepherd into a pine tree because she was jealous of the earthly maidens he flirted with. So Jove made the pine evergreen so Cybele could worship it all year. The Chinese revere the pine tree; they regard the pine, plum, and bamboo as "three friends" and you will frequently see them planted together in Chinese gardens. *Pinus* is the Latin word for "raft"; the pine was used for the boats and floats of sea-going men, and was sacred to Neptune. In Germany every pine knot hole was supposed to contain a spirit. In Sweden lovely maidens came out of the knots and in one case in Smaland a beautiful girl whose heritage was unknown lived in a home where she was adored and noted her beauty and diligence. All went well until a knot fell out of the nearby pine tree and she was irresistably drawn to the tree. The murmerings and sighing of the pine recalled her past and she shrank down and vanished into it. One pine tree in Coburg concealed an image of the Virgin in the trunk. A church was therefore built around it. A jealous witch twisted the steeple out of shape and the townspeople were able to coax the steeple back into shape by finding a pine tree to push and tug, and thereby teach the steeple to go straight. When Mary and Christ hid in a pine grove and went unnoticed, Christ put up his hand to bless the branches, thus marking the cone; cut one in half lengthwise and there is the hand of Christ. Our pilgrims landing at Plymouth were impressed by the pine, and so used its pattern on coinage seals. Maine is now the pine tree state. Japan has a long and complicated pine tree fable regarding buried riches, jealous neighbors, beautiful maidens, etc. It is entirely too involved to delve into here. Suffice it to say it rivals the Nieberlungenlied in complexity.

*Larch* was used for bridge-building by the Romans because they thought it never caught fire. However, other people believed that it was useful because its burning disturbed snakes. This is another example of picking and choosing the stories you wish to believe. The French claimed larch yielded a gum which was used by witches along with the blood of basilisks, the skin of vipers, the feathers of the Phoenix and the scales of sala-

manders in the dreadful stews boiled at midnight to curse the neighborhood. Because the larch was free-thinking and had the nerve to lose its needles, it was thought to be infested with the devil.

Since pagan times, *holly* has been brought into the house during the cold weather so the tiny fairies in the berries could escape the frigid nights. And since the bright red berries and shiny leaves were such a welcome sight in the dark days of winter, people decorated their houses with holly at times associated with Christmas. Saturnalia, the pagans' shortest day, December 21st, was brightened by holly, a custom taken over by the Christians. Caesar took his practice to England. There are many conflicting legends about when to put holly up and when to take it down, but central heat in modern houses plays a great role in the American use of holly.

Pythagorus thought that holly berries caused ice. Zoroaster was a fire worshipper but believed that since holly cast no shadow it could not cause fire. Pliny wrote "It keepeth away all ill spells or enchantment and defends the house from lightning." Here we have another fire-prevention method. An infusion of holly was used in connection with holly rites in Persia and India. A new-born's face was sprinkled with this infusion for a long and fruitful life. If a young girl wants to know if a fellow loves her, all she has to do is to put three leaves of holly in her nightgown and climb into bed. When she falls asleep and bumps into the prickles, she screams and his vision appears before her. If he loves her, he moves the three pails of water. Simple, isn't it? This can be done only on Halloween, Christmas, New Year's Eve, and Midsummer's Night—the magic days of most culture.

Our most violent TV programs cannot match the horrors of some ancient stories. The wicked stepmother kills a little German boy for stealing an apple from the orchard and cooks him up into a stew. So his father won't know what he had eaten, she buries his bones under a Juniper tree. A bird flies out of the tree over the land spreading word of the murder, takes gifts to the boy's sister and causes a millstone to fall and kill the wicked stepmother. Then he bird re-enters the tree and steps out as the original boy. Why? And why the Juniper? This tree was supposed to be a thief-catcher. All you had to do to apprehend a thief was to bend a young juniper tree branch toward the east, hold it down with large stones and say, "I will bend and squeeze you until so-and-so returns what he has taken." To the Greeks the tree was a tree of the furies. The green roots made incense and the berries were burned at funerals. The juniper opened its arms to hide Jesus in the flight into Egypt. But the greatest thing about the juniper is that it protects you against all witches who can not count its leaves.

In northern myths, Hulda is the mother of elves and the *elder* tree is where she lives. Therefore it is forbidden to build with elderwood and if anyone does, he gets severe leg cramps just living in such a house. However, on January 6th you may cut an elder branch and inscribe a circle with it. Stand within the circle and demand that the devil bring you the seeds of fern which will make you strong as thirty men. He will appear at once.

Elderwood also cures toothache, interrupts fits, removes poison from metal, fends off mosquitoes and warts, and guarantees you will die in your own home. In the Tyrol peasants used to take off their hats to elder trees. If planted near graves, the elder bursts into leaf expressing the goodness and beauty of the deceased. If the tree does not immediately burst into leaf, the relatives draw their own conclusions.

And now we have another duplication. This time *hawthorn* is spoken of as the Crown of Thorns, which seems quite likely as hawthorn has very long spikes. It is said that at one time Christ hid in a

hawthorn woods and the magpies covered Him to hide Him. Joseph of Arimethea planted a white hawthorn at Glastonbury which flowers at Christmas regardless of the weather. Charlemagne knelt before the dried-up Crown of Thorns and it burst into flowers and the air was filled with wonderous fragrance. That was about 800 A.C. Hawthorn is an emblem of hope and of marriage, and a leaf placed in the crib of a baby will protect him from witchery.

People attributed special characteristics to the trees with which they were most familiar and *hazel* comes in for its share of folklore. It was the tree of Thor and could withstand lightning. The Holy Family was also sheltered under hazel. This action seems to have been attributed to many trees. The hazel cured fevers, drove devils out of cattle, secured crops, and, if you made three pins of hazelwood and placed them in your new house, you'd never have a fire. If you cut a bough of hazel on Good Friday, you can flail it around and your enemy will dance in agony even if he is a thousand miles away. Hazel is the divining rod of our day. Cut a "Y" from a dividing branch, hold it in both hands, and it will discover for you water, gold, or silver.

There is a story that Linnaeas, who, for some reason, was skeptical about the whole thing, decided to make a test. He buried a purse of gold ducats to be devined but word got around before the hazel witch got there, and unmasked company dug up the pasture hunting the treasure and thus destroying Linnaeas' means of identifying the spot where he had buried the coins. The hazel witch arrived and his wand pointed directly to the place where the wealth was recovered. "Another such event would convince me," said Linnaeas, but to our knowledge he didn't risk his wealth again. To work, a hazel rod must be cut from the east side of the tree with the cutter facing east at the time of the first quarter of the moon, preferably on Good Friday, Shrove Tuesday, or Epiphany. For me, it worked only when I knew beforehand where the source of water was located.

When Adam and Eve were expelled for eating the apple in Eden, God took pity on them and furnished them with a hazel rod to strike water and to command animals into existence. Adam thus created a sheep. Eve made a wolf which ate the sheep. Adam made a dog which tamed the wolf, and so forth. It was a hazel rod with which St. Patrick drove the snakes into the sea; a hazel rod with which Circe turned lovers into swine. In Sweden hazel nuts can make one invisible. The Irish considered it a tree or wishes, and Mercury claimed that just by touching it you could express anything you wished in beautiful words.

There is a Haida legend of a basket made of strips of *spruce* and filled with only a mouthful of food for a long journey. The magic of it was that the food never gave out as long as the trip lasted. It reminds one of the story of the fishes and loaves.

One of the most beautiful shrubs in the Arboretum was created in the following fashion: the heavens had become overcrowded and so it was decided to colonize one of the planets which was called Earth. All the people who were sent here took on the look habits of plants or animals. (The reason that so many animals and plants have human characteristics is that they used to be humans.) When all the work of dispatching was supposedly done, it was discovered that one last individual was still in heaven waiting to be sent to earth. In order not to hurt his feelings for almost overlooking him, it was decided to disseminate him through the entire world in different sizes and colors, and make him the most admired and loved of all. That is why *rhododendrons* come in so many sizes of leaf, flowers, and trunk, and why their colors are so varied.

*Broom* figures in many legends. The father of Henry II wore a sprig of broom

*(Continued on Page 73)*

# A New Arboretum Foundation Slide Program

Helen Moodie*

At the April, 1968 meeting of the Unit Council Board a motion was made that a committee investigate the possibility of purchasing a slide projector. This was a result of efforts to have more programs available to the units without payment of fee. Programs were to be prepared for use with the projector. After investigation of various projectors, a Kodak 850 Carousel was purchased.

The projector is kept in the office of the Arboretum Foundation and may be reserved for use by the members. Each carousel holds 80 slides. Individual programs are mounted and stored in their own carousels so there need be no handling of slides. Numbers on the accompanying script correspond to the numbers on the carousel. A time period of three days is suggested to allow the person who will present the program a chance to familiarize himself with the script and preview the slides. An empty carousel is also available for use with Arboretum or member's slides.

To date, four programs are ready for use. The first, "Shrubs and Trees on the Native Walk" is self explanatory. The script was prepared by Mrs. H. P. Clausing. The slides came from several sources. Some were duplicates of Arboretum slides; others were taken by Mrs. Roger Spurr and Mrs. V. L. Parrington. Five units included this program in their meetings this past spring. It was also used in connection with the guide training program.

Our second program, "Miniature Bulbs," was prepared by Mrs. W. E. Williams. This was a program she had presented for several units. Her pictures were taken in her own and friend's gardens as well as in the Arboretum.

Pictures for the third and fourth programs were taken during this past winter and spring. Winter blooming plants is the subject and is divided into two programs only because so many plants bloom in the period from the first of November through early March. Mrs. Reynold Fredin has written these scripts. More programs will be ready during the coming year. Work is being done on the subjects of heathers, leaves, clematis, cyclamen, the building of a garden and native wild flowers. These slide programs can be used not only as free programs or emergency fill-ins, but preferably as the basis for further study, encouraging member participation in subsequent research and field trips.

Source material for future scripts is limitless. Many fine programs are prepared each year by unit members and presented only one time. If this material were made known and available to us many could share in the enjoyment of this work. Slides can be duplicated or donated.

A unit may wish to make a project of writing a script, taking pictures and donating the program as a part of their year's work. Past articles in the BULLETIN would make fine programs if permission were given for their use. Special collections of slides could also be shared with us through duplication or donation. With the addition of three or four new programs each year we will be building a fine library of slide shows.

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"Treasure Hunting in the Arboretum" is the title for the Unit Council's Fall Meeting on September 18 at the Sandpoint Community Church. Mrs. John Peterson will identify choice plant materials in the Arboretum and tell where they are located. At 10:00 A.M. there will be a Plant Sale of material from the Patricia Calvert Greenhouse.

*Mrs. Joseph Moodie is Chairman of Program Planning for the Unit Council. We commend the Unit Council for their discerning recognition of a need and Mrs. Moodie and her committee for the excellence and thoroughness of their efforts in satisfying that need.

# A Study in Fall Color at the UW Arboretum

J. A. Witt

Why do some parts of the world enjoy dazzling forest color in autumn while others are partially or totally deprived of this abrupt and massive display? What accounts for this color explosion? And why is there only an occasional bright patch of dying foliage in the Puget Sound area, while autumn in the eastern Cascades rivals the brilliance of New England?

A study of the geographical distribution of the world's forest areas gives partial answer to these questions. Those areas having a high intensity of woody plant species with brilliant autumn color reveal a certain similarity in climatic conditions. Such forests are found in sections with adequate rainfall, moderate to high summer temperatures, sharp cooling in the autumn and often cold, but never really severe, winters. These forests, usually areas of a great diversity of deciduous hardwood species, are almost all found in the northern hemisphere.

In North America, autumn coloring reaches its finest in the forests of southeastern Canada and New England west to the Great Lakes. Southward, the fall color area is found mainly in the higher elevations of the Appalachian, Great Smoky and Blue Ridge Mountains. The mountain areas of the West, particularly the Rockies and Cascades, also contain many species which color well.

Northeastern Asia, including Japan, Korea and Northeast China, likewise is a fertile region for good coloring plants as are the highlands of western China and the great Himalayan mountain range. Europe is rather lacking in autumn foliage brilliance although the southwestern and southeastern areas have some trees that do color well.

Since the bright hues of fall depend on the dying leaves of deciduous trees and shrubs, color is absent from those forests that are primarily evergreen, such as the great coniferous forests of the Pacific Northwest and the tropical forests of broad leaved evergreens found on either side of the equator. Although there may be sections of South Africa, South America and New Zealand that have the necessary climatic conditions for the development of good autumn colors, the evolutionary process does not seem to have occurred, so deciduous species are largely missing from the Southern Hemisphere.

In addition to geographical and environmental influences, many physiological problems within the plants themselves are yet to be solved. While certain principles are well understood, other factors—lacking general botanical agreement—are still being investigated.

Green leaves are green because they contain the chlorophyll pigments. These pigments, located in discrete, microscopic bodies known as chloroplasts, are found in the protoplasm of the leaf cells where they have an important function in photosynthesis—the combining of water and carbon dioxide in the presence of light to form carbohydrates. The chlorophylls usually are in such abundance that they mask another class of pigments, i.e. the carotenoids — the yellow xanthophylls and the orange carotenes. In certain plants grown for ornamentals, the yellow pigment may predominate over the chlorophyll in all or part of the leaves and a golden colored foliage will result. A third class of pigments may also be found in the leaf, the water-soluble anthocyanins. These sometimes mask the chlorophyll and carotenoids in certain trees, for example, the well known copper beech or the purple leaved plums.

The process of turning from green to yellow and orange is easily recognized, but the actual mechanism is not well understood. Chlorophyll must be constantly syn-

*Reprinted by permission of Pacific Search, 200 2nd Ave. N., Seattle.

thesized for the leaf to stay green. As autumn approaches, this synthetic activity diminishes and finally ceases altogether, while the rate of breakdown increases. The net result is a rapid loss of chlorophyll, a process that unmasks the yellow and orange carotenoids. If a leaf turns orange, it is usually because of a predominance of the carotenes—if yellow, of the xanthophylls. Certain other cell contents can modify these colors. The tannins, for instance, seem to be important in the development of golden hues.

Red foliage colors are produced by the anthocyanins alone or in conjunction with the other pigments. Anthocyanin pigments may be found in the leaf regardless of age, but when chlorophyll begins to disappear in the fall, they are synthesized in increasing quantities. Where the leaf appears a clear red it is probable that the anthocyanins are covering the carotenoids.

It is well known that many factors influence the development of the various pigments which give brilliant fall colors. One of the most important is the heredity of the plant. Certain species almost invariably turn bright colors despite climatic and other influences; for instance, the sourwood *(Oxydendrum arboreum)* rarely fails to turn red no matter where it is located. Other species may require a specialized site to color well. Coloring in still others may vary from plant to plant; i.e. the leaves of a certain individual Japanese maple *(Acer palmatum)* turn red in the autumn, while those of another of the same species under similar conditions become yellow.

The influence of weather is very marked. Development of the best fall color occurs when the season is one of bright sunshine with warm days and cool nights. Under these conditions, sugars are manufactured in the leaf in excess of the translocation rate, leading to an accumulation which favors the production of anthocyanins.

The effect of high light intensity and probably of high temperatures (the two are closely correlated) is most easily seen on certain plants, *Fothergilla monticola,* for instance. Some plants of this shrub will develop a lovely red color on the side facing the sun. The shady side, however, will change to golden yellow. It is even possible to find a leaf half red where exposed to the sun and half yellow where it is shaded.

The amount of water available is still another, if somewhat confusing, factor in the development of color. A high supply of water when coupled with high soil fertility usually results in excessive vegetative growth and poor autumn coloring. Drought, on the other hand may produce premature coloring but more often results in the death of the leaf. Just what an adequate supply of water is depends somewhat on the plant. Washington's native blue huckleberry *(Vaccinium deliciosum)* will color beautifully under conditions that would kill the swamp loving Tupelo *(Nyssa sylvatica).*

One last factor, mineral nutrition, plays a little known but important role. As suggested above, excessive nitrogen may reduce the color, probably by converting the sugars into proteins rather than into pigments. On the other hand, mineral deficiences can cause the development of high coloring anthocyanins, although there is some evidence that an adequate supply of potassium may conversely serve to increase the intensity of the color.

Some trees and shrubs do not give bright autumn colors. Their leaves merely turn brown and fall. This could be due to the lack of inherited ability to color, to improper location, or to some climatic effect such as drought or a severe early frost that kills the foliage before it can turn.

The University of Washington Arboretum has several avenues open to it for bringing in new or different plants for trial. About sixty per cent are raised from seeds obtained through an informal exchange with other similar institutions throughout the world. Each year seeds are collected from plants growing in the Arboretum's collec-

*(Continued on Page 72)*

# The Arboretum Bulletin

Vol. XXXII, No. 3 Seattle, Wn. Fall 1969


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9 a.m. to 4:30 p.m., Monday through Friday
Phone EAst 5-4510

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To keep membership in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and The Bulletin will be discontinued.

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University of Washington Arboretum
Seattle, Washington

I hereby apply for membership in the Arboretum Foundation and remittance for same is enclosed to cover dues for the next succeeding 12 months.

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All memberships are non-assessable.

# ANNUAL MEETING

Elected at the Annual Meeting June 12, 1969 were the following members of the Board of Directors:

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An Honorary Life Membership in the Arboretum Foundation was presented to Gene Webb, our recently retired Executive Secretary at the Annual Meeting.


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## Kelly Nishitani

The University of Washington Arboretum and the Foundation lost a devoted friend and member Sunday, August 17 with the death of Kelly Nishitani. Kelly was born in Japan, but had lived in Seattle since 1911. He was best known perhaps for his work in bonsai, the art of dwarfing trees and plants and was often referred to as the "Father of Bonsai" in the Puget Sound area. Frequently he was called upon to speak for an organization or to give a demonstration of his art, always donating his fee to the Arboretum. Most recently, Kelly was the Chairman of the Bonsai Exhibit at the Seattle Art Museum during the Botanical Congress. He was a long time member and supporter of the Foundation; one of the Units is named in his honor, the Kelly Nishitani Unit No. 7. He was a member, teacher, advisor of the group and was greatly respected both for his ability and as an individual. He imparted to each of us some of his knowledge of the art, his eye for beauty, and his great appreciation for all things living. Doris Butler

## *This is your Arboretum, kept alive by your support*

We are pleased to welcome the following new members (June 1, through August 8, 1969): Sustaining – Mountain View Garden Club. Annual—Mrs. Frederick C. Baker, Mrs. Frederick H. Beck, Chaffee-Zumwalt & Associates, Mrs. Andrew A. Chrisman, Mrs. Leslie R. Collins, Frank H. Cornwall, Mrs. Raymond Cutter, Mrs. Glenn A. Edwards, T. Saunders English, Mrs. Douglas M. Helppie, Mrs. Gordon B. Hirst, Mrs. Donald P. Jackson, Mrs. Elizabeth Johnson, Dr. and Mrs. Clarence R. Lellelid, Mrs. David Lerner, Mrs. Gerald Longstreth, Mrs. Wood Lyda, Mrs. Don Mawbry, Mrs. E. W. Pruett, Mr. and Mrs. G. M. Schneider, R. A. Seelig, Mrs. R. W. Simpson, Mrs. William E. Smith, Mrs. D. C. Thompson, Mrs. George B. Ward, Mrs. F. Williams.

We are also grateful to the following members who have increased their dues to: Sponsor—Mrs. F. Arnold Polson. Supporting—Mr. & Mrs. Thomas P. Youell, Mrs. Noah Gershevsky.

# Some of Our Favorites ☆

## ☆ *Won't You Send Us Yours?*

*Oxydendrum arboreum*

The sour wood or sorrel-tree is a small tree found growing in the southern states, usually in mixture with other hardwoods. The tree gets its name from the leaves which are quite sour tasting. They are deciduous, eliptical, and urrulate. The beauty of the tree is reflected in its leaves, which are a bronze green when they open and which turn to a bright scarlet in the autumn.

The flowers, which are sought by honey bees, produce an excellent, delicate tasting honey. They are small, white, bell-shaped in one-sided delicate racemes, opening in late July or August.

The bark on the trunk of mature trees is gray, tinged with red, and is longitudinally furrowed with broad, rounded ridges.

Because of its small size, the tree is of little commercial value. However, the wood is hard and close-grained and used locally for handles of tools, and for the bearings of machines. It is an excellent ornamental and is widely planted in the eastern states to lend color to the landscape.

A fine specimen is growing in the Arboretum just to the west of the office building.

Gordon D. Marckworth

# Recipients of Honors

## DIRECTOR MULLIGAN RECEIVES HONOR

Our readers will be interested to learn that our director, Brian O. Mulligan, was recently appointed a member of the Advisory Committee on Research for the Morton Arboretum at Lisle, Illinois. He attended the first meeting of the committee in May. G.D.M.

## J. W. KALKUS HALL

*Western Washington Research and Extension Center, Puyallup, Wn.*

On a bright afternoon July 14, 1969 I had the pleasure and privilege of representing the University of Washington Arboretum at the dedication of J. W. Kalkus Hall, the new laboratory and office building at Washington State University's Western Washington Research and Extension Center, Puyallup, Wash.

This handsome and functional building, named in honor of Dr. J. W. Kalkus, Superintendent of the Center from 1926 to 1953, was erected at a cost of about $1.3 million and will give the staff at the Puyallup center superb facilities for their research and extension activities in western Washington agriculture and horticulture.

Kalkus Hall is a three-story building of steel and concrete covered with a shell of brown stained western red cedar which blends beautifully with the rural setting of W.W.R.&E.C. Its 29,000 plus square feet of floor space contain two floors of laboratories, growth chambers and equipment rooms for the research staff in agricultural chemistry, soils, entomology and pathology. The basement has offices for the extension staff, mail room, duplicating room and similar services for the dissemination of information.

Dr. Kalkus, obviously very pleased on being honored by such a fine building, spoke at some length during the dedication ceremonies about the difficulties he and early staff members had in getting the Experiment Station, as it was then known, started. Its distance from the center of administration at Pullman, shortage of funds, lack of interest all had to be overcome before the center could develop. This sounded like a familiar story—one that the Arboretum and its proposed Floral Hall-Administration Center is now going through. Perhaps W.W.R.&E.C.'s new Kalkus Hall augurs well for us.

J. A. Witt

## DR. DONALD WYMAN AWARDED A VEITCH MEMORIAL METAL

Dr. Donald Wyman, horticulturist at the Arnold Arboretum of Harvard University, has been awarded a Veitch Memorial Medal in gold by the Royal Horticultural Society of London, England. This is the highest award the Society can bestow on a foreign national. The Veitch medal has been awarded annually since 1923 by the Royal Horticultural Society under terms of the Veitch Memorial Trust to "Those who have helped in the advancement and improvement of the science and practice of horticulture."

The Veitch Memorial Trust was established in 1870 to commemorate the activities of James Veitch, the founder of the famous British nursery firm. The object of the trust was to improve horticulture standards by recognizing outstanding contributions to the advancement and improvement of horticulture science and practice. The form of recognition is generally awarded in a medal in either gold or silver. From two to seven horticulturists usually are chosen to receive the medal in gold.

In the 46 years the Royal Horticulture Society has made the awards, only 10 North American horticulturists have been selected for recognition. Three of these medalists have been connected with the Arnold Arboretum; E. H. Wilson, plant explorer and horticultural writer; W. H. Judd, propagator; and Dr. Wyman. Dr. Wyman visited the University of Washington Arboretum in July '49 and again in July '57. He has contributed articles to the Arboretum Bulletin in the falls of 1943, 1947, and 1949, and in the spring of 1950 and the winter of 1954. G.D.M.

## PACIFIC TROPICAL BOTANICAL GARDEN

The Pacific Tropical Botanical Garden, a private non-profit organization, was chartered by Congress in 1964 to create a Hawaiian scientific botanical garden which would be a center for research and tropical botany with special reference to the fields of medicine, nutrition, and conservation.

Dr. William S. Stewart was recently appointed the first scientific director of the Garden. Dr. Stewart is at present director of the County of Los Angeles Department of Arboreta and Botanical Gardens. He will assume his new duties in Hawaii on January 1, 1970.

Thus far extensive negotiations have been carried on with Hawaiian state officials and private landowners for the acquisition of suitable sites in Hawaii. The Garden hopes to establish its headquarters on Oahu and to locate satellite gardens on the other islands where specific ecological environments are of interest.

Dr. Stewart has held his present position for 14 years. He was formerly chairman of the Department of Horticulture, University of California, Riverside, and head of the Department of Plant Physiology of the Pineapple Research Institute in Honolulu. G.D.M.

*Now all the wood is but a murmured light*

*Where leaf on leaf falls softly from the height . . .*

*Henri De Regnier*


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# Ginkgo Biloba

*(Continued from Page 53)*

ters along the length of the shoots, varying from one to three inches in depth and breadth. They resemble a fan in opening and there is nothing more fascinating than to watch the tightly folded leaf as it opens finally to a shape resembling a maidenhair leaf. The color is a light soft green with considerable gray-blue cast, and gradually deepens to a darker greyed-green with a texture firm and leathery.

The Ginkgos' final glory comes in the fall when the leaves blaze forth into golden fans against an intense blue late October sky. Then suddenly they are gone, leaving a beautiful branch line silhouette and the ground covered with a blanket of soft yellow.

One has only to watch the Gingko perform one full season to realize how fortunate we are to have a truly handsome survivor from the beginning of time.

# On Moving Ginkgo Trees

It is interesting to note that Juki Iida, the landscape architect and engineer who planned and supervised the installation of our Japanese Garden in the Arboretum, moved over 1,000 Ginkgo trees when he and Mr. Moriwaki of the Metropolitan Park Department in Tokyo, landscaped the Olympic Games area in that city.

What was more astounding was that most of these trees had reached a diameter of nine inches, yet a ball of only 18 inches was taken in the transplanting. None of the trees died. They may be seen to this day on the grounds of the former Olympic Games plaza. Mr. Iida informed us that much care was taken in the root pruning, in the years prior to moving. This care together with much know-how did the work.

Ken Sorrells,
Editorial Board

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# A Study in Fall Color at The UW Arboretum

*(Continued from Page 67)*

tions and from those native to the Pacific Northwest. A list of these, the "Index Seminum" is sent to about 300 botanic gardens, arboreta and private individuals in nearly every country that can grow our plant material. They in turn send the UW Arboretum their lists. Any seeds desired are marked on a "Semina Desiderata" and an exchange is effected. The other forty per cent of the Arboretum's acquisitions arrive as plants or cuttings (i.e., vegetative material as opposed to seeds) which may come from any number of sources such as a local nursery or a foreign garden.

The introduction of plants for autumn color is done in two ways. Seeds of trees or shrubs known to give good colors may be ordered and the seedlings then grown for a number of years in the nursery area where the staff can evaluate them. Usually, in any group of such plants, one or two prove to be superior in color, growth, habit or some other characteristic and it is these that are used for outdoor plantings in preference to run-of-the-mill specimens. The other and surer method is to obtain plants or scions (vegetative parts) from specific plants known to produce good color. This procedure insures the proper genetic combination needed to produce the bright colors desired. If the Arboretum were to depend on the latter technique alone, however, it would run the risk that a specimen which colors well in New England would fail to do so in Western Washington. The genetic lottery of raising seeds assures a chance to select those strains best suited to our conditions.

See also Bulletin Vol. XXIV, 3, pp. 70-81:
Witt, J. A., Fall Color in the Arboretum p. 74
Van Rensselaer, Maunsell, Tree Selections for Fall Color p. 76
Cole, Sallie F., Fall Color in the Garden p. 77
Walker, Richard B., Why Leaves Change Color in Autumn p. 79
Woerner, R. L., Fall Color in Eastern Washington p. 81

# Myths and Legends About Trees and Shrubs

*(Continued from Page 64)*

in his hat, giving rise to the word which became the designation of a long dynasty of English rulers: Plantagents. It is from *Planta genista.*

The Japanese so revered the *cherry* that they believed that if anyone should cut a branch he would lose a finger. In about the 5th Century a Japanese gentleman was sitting in his courtyard enjoying a winter day when a lone cherry blossom drifted into his garden. He sent his courtiers about the entire area until they tracked down the tree which was blooming. It was propagated and now we have *Prunus autumnalis.* Girls who lose favor of their gentlemen friends can pin a picture of him on a cherry tree and pound nails into it, and he will be punished by the gods straightway. If you have ever wondered what is in a cherry pit, it is the damned soul of some poor sinner, imprisoned forever.

*Chestnut* trees got their start in Turkey where a true Mohammedan was cooking his meat over an open flame supported by a twig struck into the ground. It sprouted and grew a tremendous tree right where one was needed. The chestnut tree is so powerful that at Aetna one tree supported Xenephon's entire army. On St. Thomas' day the poor are fed chestnuts and the supply is not diminished. Our horse chestnut gets its name because the cicatrix is shaped like a horse's hoof.

One last tree—and I will stop this meandering. *Laurel* has many myths and legends connected with it. The Greeks chewed bay laurel for going into a trance at Delphi. Despatches were encased in laurel so no harm could befall them. Daphne was changed into a laurel tree when she was pursued by a river god and prayed for rescue. (We had earlier reference to her being changed into an oak in the German legend.) Apollo chided Cupid for some fault, and Cupid shot an arrow into him causing him to fall in love with the first thing he saw. Of course, this was the laurel tree which was really Daphne, so he commanded that it be green forever and that its branches be used to crown all who excelled in courage, service, or creation of beauty. If one slept on laurel. he could write beautiful poetry, which, if read at a university, allowed one to be crowned with laurel leaves and berries. So we have the words "poet laureate." The sleeping on laurel and writing poetry and reading it at the university took so much time that one could only be a bachelor, so we have "baccalaureate." The Roman Emperor Tiberius supposedly crowned himself with laurel and got under the bed whenever a storm approached.

With the patterns set through mythology of all sorts, people have apparently always felt the need to anthropomorphize trees and be alternately frightened and reverent of their attributes. We at the Arboretum are especially aware of trees and plants, and our lives are made richer each day because of them.

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# BOOK REVIEWS

Thompson, Dorothy Burr (with Ralph E. Griswold, Landscape Consultant) **Garden Lore of Ancient Athens. Excavations of the Ancient Agora. Picture Book No. 8.** $1.00 postpaid. 36 unnumbered pages. American School of Classical Studies at Athens, c/o Institute for Advanced Study. Princeton, New Jersey 08540.

This is a charming and informative account of ancient plantings and gardens of the Agora and Athens, with four pages of handsome colored illustrations of fruit and wild flowers. There are other illustrations in black and white, showing the use of flowers and leaves in decoration of ancient pottery and in sculpture. There is also a map of the area with aqueducts, fountains and probable sites of ancient trees mentioned by the poets. Sophocles in his **Hymn to Attica** commences with a greeting: "Stranger, you have reached a famous land . . . Here in green foliage chants the nightingale as she sits in the ivy among the branches. Here blooms the fair narcissus . . . And here as well glows the golden crocus . . . Pindar called the city of Athens "violet-crowned."

The book has sections on favorite flowers, poetic weeds, fruits and nuts, trees and shrubs, herbs and drugs, vines and funerary gardens. Of interest is the mention of the prodigal number of wild flowers which bloom in Greece in the Spring and summer—some 6,000 species.

Bernice F. Smith
Forest Resources Librarian

Pfeffer, Pierre. **Asia. a natural history.** (The Continents we live on series) $20.00. Random House, New York. 1968.

Presents the extremes of the countries of Asia—from the heights of the Himalayas to the depths of the Dead Sea, from -75°F temperature in Siberia to 115°F in Arabia, and rainfalls as varied as 400 inches annually in Assam compared with insufficient quantities even to record in arid Arabia.

The diverse and interesting animals and plants of the vast and varied Asiatic Continent are described: the Komodo Dragon, the golden monkeys of Szechwan, giant pandas and tiny barking deers, accompanied by magnificent photographs.

The author, Dr. Pierre Pfeffer is an Asian specialist on the staff of the Museum National d'Histoire Naturelle in Paris.

Bernice F. Smith
Forest Resources Librarian

Kew, Eng. Royal Botanic Gardens. **The Royal Botanic Gardens, Kew, an illustrated guide.** London, Her Majesty's Stationery Office, 1961.

This is a guide to the 300 acre Royal Botanic Gardens, Kew. In 1759 the garden of Princess Augusta in her private domain of Kew House, and the garden of Richmond Lodge were joined to make the Gardens (Hence the plural) Richmond Lodge was occupied by George III, Princess Augusta's son. In 1841 the maintenance of the Gardens was taken over by the State; in 1897 Queen Victoria added the garden of the Queen's Cottage Grounds, stipulating that it be maintained in its semi-arid state. Separate gardens are variously named: the Rock Garden, the Chalk Garden, the Clematis Garden, the Heath Garden and the Mound Garden. The present form is still largely that plotted by Sir William Banks and Sir Joseph Hooker, the first two directors. Kew Gardens still serve their primary scientific purpose—accurate identification of plants in pure and applied botany, and the dissemination of botanical material as seeds or plants throughout the world. The Gardens played an important role in the development of rubber, cocoa and other economic plants. Kew also functions as a plant quarantine station. The living collection of the Gardens includes some 25,000 species and varieties, and numerous cultivars.

Bernice F. Smith
Forest Resources Librarian

Headstrom, Richard. **Nature in miniature.** Knopf, New York, 1968. $10.00

An account of nature's small wonders, a seeing tour with an accomplished guide, of gardens, woods, meadows and streams, describing such wonders as the geometry of a snowflake, a moth's antenna, and folded tree buds in the spring.

Includes an excellent selected bibliography of good reading in "small" areas—i.e. animal camouflage, navigation, photoperiodism, animal tracks, etc.

The author, Richard Headstrom, is a one-time teacher, associate curator of the New England Museum of Natural History, curator of Entomology at the Worcester Museum of Science and Industry, as well as a columnist for several newspapers. The book is embellished by the talented author with his own accurate and beautiful drawings.

Bernice F. Smith
Forest Resources Librarian

## *EUCRYPHIA GLUTINOSA*

The cover photo of **Eucryphia glutinosa,** a choice, small, semi-evergreen tree or shrub from Chile, is of a specimen growing in the **Eucryphia** section near the Lookout. This particular specimen was acquired in 1947, first flowered in 1956, and is now approximately 10-12 feet high. Its four-petaled white blossoms, appearing singly or in pairs from the end of the shoots and from the terminal leaf-axils, are approximately 1¾ to 2½ inches across. It has numerous, prominent pinkish stamens and a slight very sweet fragrance. The fruit is a hard, woody pear-shaped capsule ½ to ¾ inches long. **Eucryphia glutinosa** grows in an upright manner, with dark green leathery pinnate leaves with 1½ to 2 inch leaflets. Flowering in August, it is spectacular for a short period of time, sometimes becoming beautiful again following a sharp frost when the leaves take on autumn tints before dropping off. This specimen, however, has remained evergreen throughout the year. D.E.B.

See also:

Davis, Lyn, An Appraisal of Small Ornamental Trees in the Garden, Vol. XXVI, 4, p. 125 (Winter, 1963).

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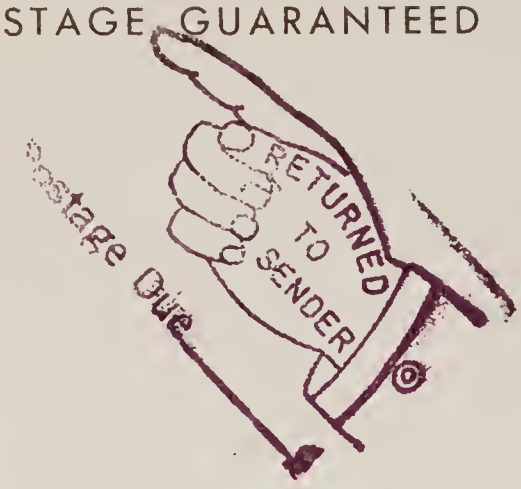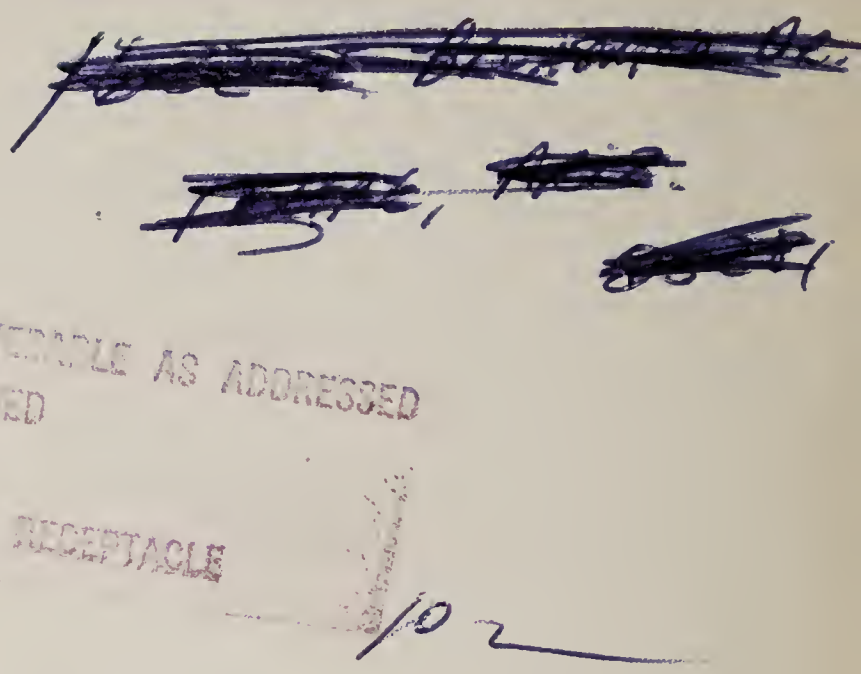
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